

Tech Innovations Changing the Measurement Game:

Empowering Local Informed
Decisions for Improved Nutrition
& Health

Hidden hunger is everyone's business

At BioAnalyt, we're driven by the conviction that knowledge about the nutrients in our food and body empowers us to make healthier decisions for our lives. It all begins with measurement.

Half of children under five and two-thirds of reproductive-age women are micronutrient deficient, predominantly in Sub-Saharan Africa and South Asia. In affluent countries like the US and UK, one in three women lack iron, folate, or vitamin D. While severe deficiencies manifest as symptoms like night blindness or goiter, many face subtler impacts on their health and development, leading to the term „hidden hunger.“

Micronutrient Deficiencies (MNDs) pose significant repercussions. They contribute to maternal and infant deaths, impair childhood physical and intellectual growth, diminish immunity and resilience to health challenges, reduce educational attainment and work productivity, and can lead to tangible Gross Domestic Product (GDP) losses—up to 11% annually.

Global Crises Amplifying Malnutrition Challenges

Recent years have witnessed a plateau in the global efforts against hunger and malnutrition, with indications that the situation could further deteriorate. Consequently, MNDs persist as a grave public health issue, especially in low and middle-income countries (LMICs). These regions often grapple with limited access to varied diets, inadequate nutritional awareness, and constrained health services.

The Unfulfilled Promise of Food Fortification

While fortifying staple foods holds immense potential to address micronutrient

malnutrition efficiently and economically, the existing legislation doesn't suffice. The efficacy of food fortification programs is jeopardized without robust industry adherence and rigorous regulatory oversight. Many nations still confront challenges like non-fortification and under-fortification, which hamper the success of these initiatives. Alarming, global data suggests that merely half of the foods purportedly fortified meet the micronutrient standards set by respective national or regional authorities. This discrepancy primarily affects consumers who, trusting labels, may consume staples devoid of the claimed micronutrients. For tangible improvements, it's imperative to collect, analyze, and disseminate monitoring data in a secure and actionable manner.

BioAnalyt: Championing Localized Nutrient Testing

At BioAnalyt, we're grounded in the philosophy that simple solutions can address profound challenges. For a nutrition program to make a real difference, essential nutrients must be delivered to those most in need. This necessitates measuring nutrients throughout the entire food value chain. By innovating rapid and straightforward testing methods—essentially bringing the lab to the field—we stand at the forefront of this mission. In tandem with our customers and partners, we're committed to combating hidden hunger and elevating nutrition standards globally.

Impact through quality nutrition data

You cannot manage what you cannot measure

The key to success in any nutrition program is effective and robust monitoring. When done accurately, it provides you with valuable data about your performance and enables you to correct the program and stay on the right track.

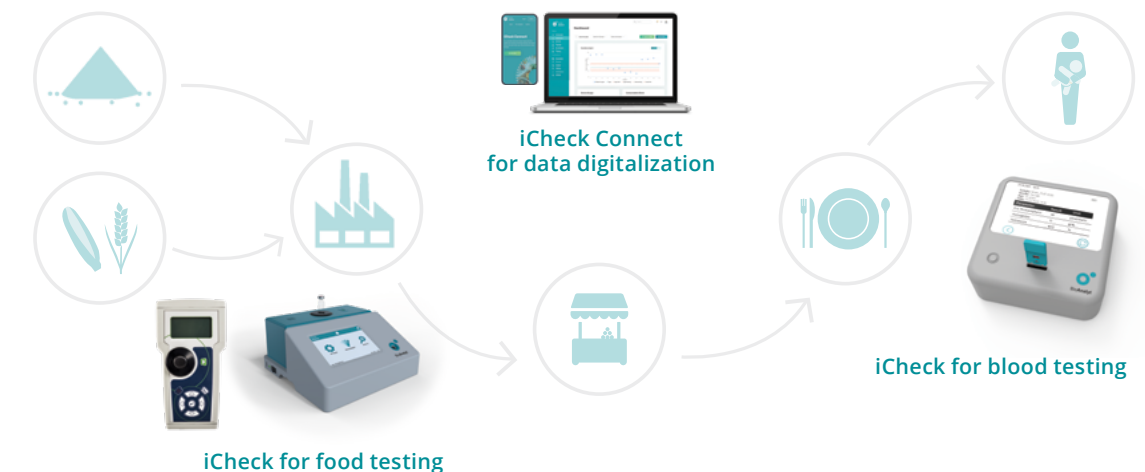
Accurate monitoring saves you time, money and resources, builds the trust with the sponsor supporting the program, and ultimately saves lives!



Know where the nutrients are with iCheck

To monitor a nutrition program implies making sure that the micronutrients actually reach an individual's plate and in the right amount. To ensure that this is the case you must measure the nutrients at each and every point of the value chain.

iCheck enables you to do just that, and at a fraction of the cost and resources needed when using standard laboratory methods. iCheck enables you to know, here and now, how much of the nutrients are in the sample. It is an all-inclusive test kit for rapid measurement of nutrients in food and biological fluids. It gives you immediate quantitative result and empowers you to take the right action at a time and location it is needed.



Digitalization of food systems is a critical next step

A 2022 report by the Global Hunger Index cites positive examples of how food systems are being improved at the local level, using data to „track government performance and ... engaging in multistakeholder platforms“.

BioAnalyt is at the forefront of this agenda and aims to improve access for all stakeholders - from producers and wholesalers through to international organizations and regulatory authorities - by providing easy-to-use and cost-effective devices and digital solutions that provide rich insights into food fortification compliance and overall status.

A decade of experience in bringing lab to the sample

BioAnalyt has a proven track record in empowering local nutrient testing capacity

BioAnalyt has received global recognition for our innovative solutions that enable measurement and tracking of micronutrients in real-time, driving fast and evidence-based decision-making. Our patented flagship product, iCheck, is a portable device that can quantitatively measure the micronutrient content of fortified foods within a matter of minutes.

First launched in 2012, iCheck has been consistently transforming the ability of food system stakeholders to make nutrition and fortification levels visible, enabling faster, easier, and more cost-effective access to micronutrient testing data amongst BioAnalyt's 300+ public and private sector customers in over 60 countries, without requiring traditional laboratory capacity.

We offer 6 iCheck devices with accompanying consumables that measure vitamins (vitamin A, vitamin E, carotenoids) and minerals (iron, iodine) in food and biological samples. With our current iCheck device series, BioAnalyt has established itself as a major player in assessing fortification status in different staple foods, enabling measurement.

Our Products:



Scan for more information



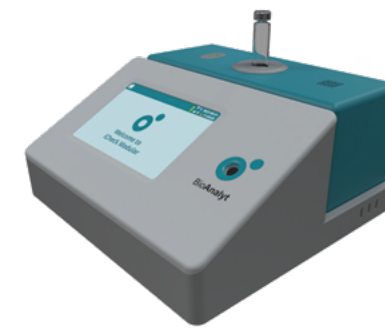
Our Partners and Customers:



Our services: Product lease, Subscription options, Global shipment, Product training, Continuous after-sales support.

Our latest innovations will drive improved efficiency and data-driven decision-making

Building on our strong track record and considering the potential of digitalization, BioAnalyt is developing two new and highly interconnected products; iCheck Modular and iCheck Connect. Together, these products will provide an ecosystem-level solution from on-site testing solutions to an online platform for digitalized Quality Assurance and Quality Control (QA/QC) for food-fortification and beyond.



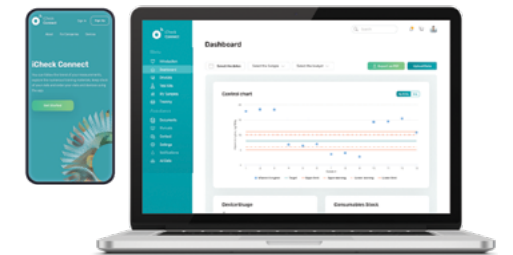
Next generation of iCheck devices enabling multiplex food analytics and integrated data processing

Modular portable analytical devices that empower integration of nutritional, food safety and quality parameters, delivering one stop solution for food production and monitoring.



Digitalizing your quality data

iCheck Connect is a mobile and web app for your iCheck device to facilitate measurement, record keeping and evaluation of fortification quality data.



Next generation of iCheck devices for point-of-care human diagnostics*

iCheck ID.A is an innovative device platform for point-of-care screening employing multi-modal sensing technology for versatile test application development to target diagnosis of nutritional, metabolic and inflammatory diseases.

The first key application of this new device platform is the point-of-care screening of iron deficiency and associated anemia in a single drop of blood.



QuImpact

Technical services to improve quality and impact:

- Customized technical training
- Development and implementation of QA/QC digitalization solutions
- Customized testing protocol development and implementation.
- Feasibility studies, validations, rapid coverage and compliance assessments



Changing the Measurement Game



iCheck Modular: advanced portable lab solution for food fortification and food quality testing

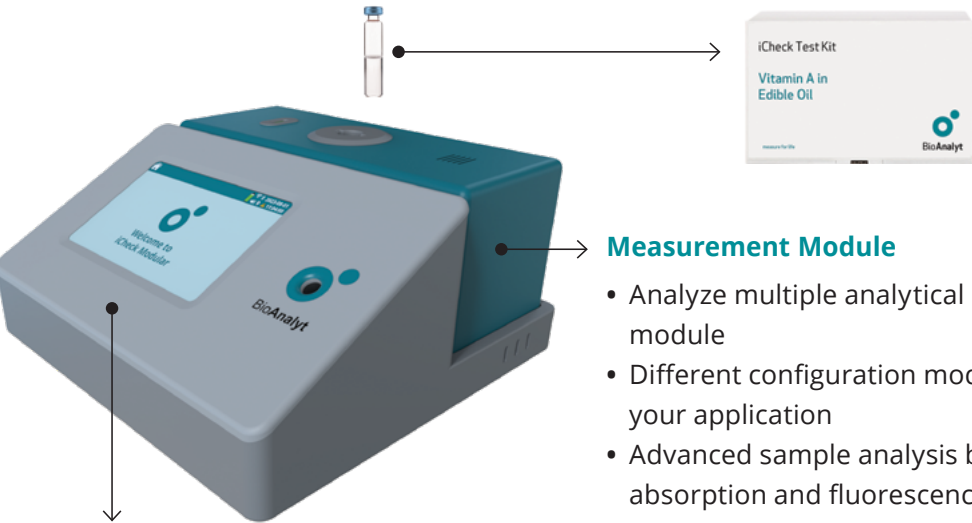
Leveraging novel methods and analytical solutions, iCheck **Modular** is our new ‘all-in-one’ field hardware solution that will enable food producers to rapidly test quality, safety as well as fortification parameters with a single device.

Measurement Device

iCheck Modular comes with a case and has two modules: Measurement (green) and Central (grey). New Measurement Modules will be developed with further analytical possibilities and can be used with same Central Module. The case contains all the necessary accessories.

Consumables

Test Kit box comes with 20 to 100 pre-filled reagent vials and everything necessary to perform the measurement. Consumables can be stored at room temperature for up to 12 months.



Measurement Module

- Analyze multiple analytical parameters with a single module
- Different configuration models available tailored to your application
- Advanced sample analysis by combining broadband absorption and fluorescence spectroscopy
- Multi-modal analysis by applying advanced data analysis to boost precision and reliability

Central Module

- Perform measurements, manage consumables and view your data on 5" touchscreen
- Integrated camera to capture QR code and labels
- Integrated wired and wireless connectivity with customizable API to connect to e.g., iCheck Connect or MIS.
- Bluetooth + WLAN connectivity
- Internal storage capacity for > 10,000 measurements
- Integrated rechargeable accumulator for off-grid operation

Analytical Parameters

iCheck Modular serves as an platform that enables for the integration of additional analytical parameters for nutritional value as well food quality and safety. Initial parameters to be developed and integrated into iCheck Modular are vitamin A in edible oils and fats; oil quality parameters starting with peroxide value. Nutritional parameters in other food vehicles will be integrated next; followed by safety parameters. New parameters will be either available after a remote software update or may require an additional Measurement Unit.

Table below in green illustrates the parameters currently **under development** and in grey the parameters **in planning**.

	Edible oils & fats	Wheat & maize flour; sugar; salt; FRK; premixes	Dairy products; RUTF; CSB; Condiments; crops; beverages; etc	
Nutrition Parameters	<ul style="list-style-type: none">Vitamin A	<ul style="list-style-type: none">Vitamin AIronIodineZinc	<ul style="list-style-type: none">Vitamin AIronIodineCarotenoids	<ul style="list-style-type: none">Vitamin EVitamin DVit. B9 & B12Zinc
Food Quality & Safety	<ul style="list-style-type: none">PeroxideFFAIodine ValueColorHeavy metals	<ul style="list-style-type: none">MycotoxinsDrug residuesPesticidesHeavy metals	<ul style="list-style-type: none">MycotoxinsDrug residuesPesticidesHeavy metals	

Improved robustness and usability of the testing methodology

iCheck Modular enables development of methods with improved robustness and lower user-generated errors. In particular, new method for measurement of **vitamin A in fortified edible oil** includes safer reagents, has wider measurement range, lower variation and significantly reduced user-generated error through robust user-friendly testing process.

Results in minutes

Low cost

Portable

One day training

Expandable

We Are Shifting the Digital Landscape



iCheck Connect: building block of digital QAQC empowering stakeholders with real-time data on fortification quality

iCheck Connect is a companion mobile and web app for your iCheck device to facilitate measurement, record keeping and evaluation of fortification quality data.

It empowers iCheck users to improve their measurement techniques, accurately interpret and utilize data for decision-making and action. Furthermore, iCheck Connect enables connectivity and secure data sharing to monitoring databases and management information systems (MIS) facilitating quality data transparency.



Food Producers

- Ability to record and evaluate measurement techniques
- Accurately interpret and utilize data to support informed decision-making, ultimately driving improved compliance and brand differentiation.
- Facilitated visual reporting and data-sharing with local

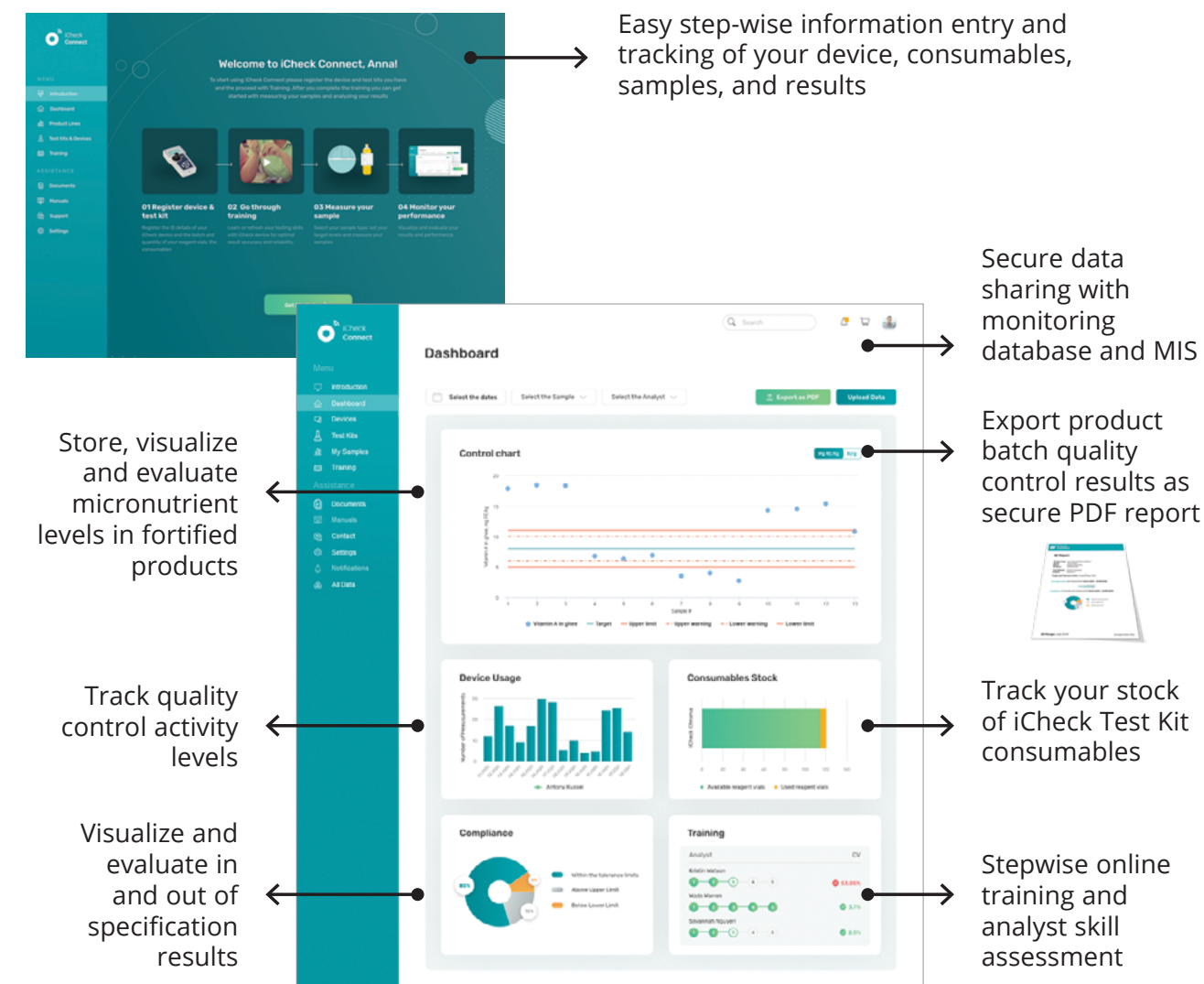
Food control authorities

- Simplified approach to organize and maintain testing and monitoring efforts
- Access to intuitive and visual dashboard reports

Institutions & NGOs

- Access to high quality, actionable data to support improved decision-making and the design of targeted interventions to support improved health outcomes at the national and global level.

Key Features of iCheck Connect



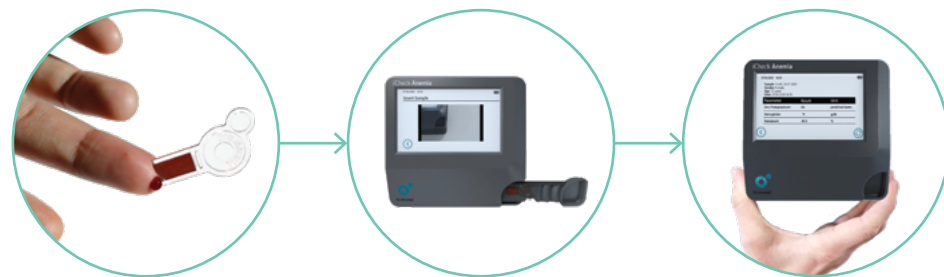
iCheck Connect has been piloted in collaboration with Nutrition International in Pakistan. Edible oil millers have been onboarded to iCheck Chroma 3 device for testing vitamin A fortification in edible oil, and to iCheck Connect to upload the data. iCheck Connect has been further linked with national monitoring platform FORTIS.



Transforming iron deficiency diagnostics from acute to preventive

iCheck ID.A: point-of-care screening of iron deficiency with and without anemia

iCheck ID.A is an innovative device designed for the point-of-care screening of iron deficiency and associated anemia. iCheck ID.A simultaneously measures zinc protoporphyrin and hemoglobin (Hb) in a drop of blood without any chemicals or sample processing. Zinc protoporphyrin (ZnPP) is an established iron deficiency marker, while hemoglobin is the most used parameter in diagnosing anemia.



Field and laboratory trials with functional prototypes demonstrated clinical utility in differentiating ID with and without anemia at point of care in finger prick blood.



BioAnalyt is now in the process of developing a technical prototype that meets EU IVDR requirements enabling robust, reproducible, and clinically reliable ID/IDA diagnosis.

This prototype integrates a multi-modal sensing approach combining multiplexed spectral analysis of fluorometric and absorption information. A machine learning based algorithm is applied, providing advanced in-depth analysis of background and sample information. The combination of these technological modalities enables further metabolic and inflammatory parameters to be targeted.

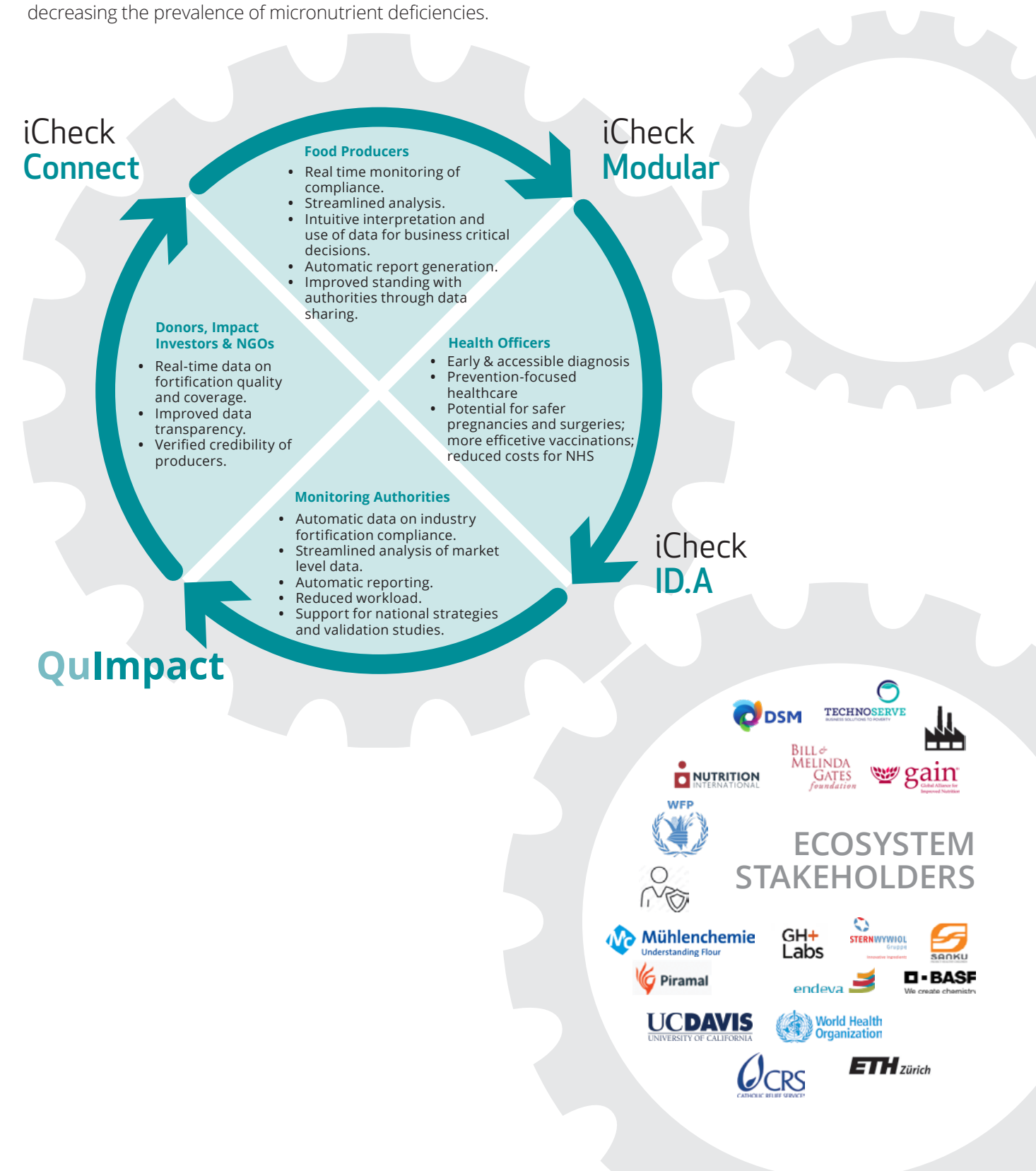
Our Supporters:



We welcome partners and investors to speed up the delivery of our innovation to the market

Building blocks of monitoring systems empowering ecosystem stakeholders with real-time data on nutrition quality and health

Our multifaceted connected hardware and software solutions provide rapid, cost-effective, and easy-to-operate tools for quantifying quality of nutritious foods and related health status in the population. They facilitate the establishment of a 'universal language' between industry and regulators resulting in easier, faster, and more transparent monitoring processes ensuing higher quality nutritional interventions and ultimately decreasing the prevalence of micronutrient deficiencies.



We welcome partners and investors to accelerate development and scale up of our innovations and ensure maximum impact of health and nutrition interventions locally and globally.

measure for life

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